

ABSTRAK

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Jurusan / Program Studi : Teknik Mesin / Diploma Tiga Teknik Mesin
Judul Laporan Akhir : Rancang Bangun Mesin Dowel Untuk Membuat
Silinder Dengan Diameter 28mm (Perawatan)

(2026: xii + 46 halaman. + 8 gambar+ 6 Tabel + 10 lampiran)

Laporan ini membahas perawatan pada mesin dowel kayu silinder diameter 28 mm yang dirancang sebagai media pendukung kegiatan praktikum di Jurusan Teknik Mesin Politeknik Negeri Sriwijaya. Mesin ini digunakan untuk membentuk bahan kayu menjadi silinder melalui sistem pemotongan menggunakan motor listrik, transmisi pulley dan V-belt, poros, serta mata pisau pemotong. Tujuan laporan ini adalah untuk mengetahui prosedur perawatan harian dan berkala, proses perawatan mesin, upaya pencegahan kerusakan, serta penerapan *preventive maintenance* dan *corrective maintenance* guna meningkatkan efisiensi dan kontinuitas operasi mesin. Metode yang digunakan meliputi observasi, identifikasi komponen, inspeksi kondisi mesin, pelaksanaan perawatan, dan pengujian fungsi komponen setelah dilakukan perawatan. Kegiatan perawatan meliputi pembersihan mesin, pelumasan *bearing* dan poros, penyetelan komponen, pemeriksaan sistem kelistrikan, serta penggantian komponen yang keausan. Hasil laporan menunjukkan bahwa penerapan perawatan yang dilakukan secara rutin dan terjadwal mampu menjaga kestabilan kinerja mesin, mengurangi risiko kerusakan mendadak, memperpanjang umur pakai komponen, serta mempertahankan kualitas hasil dowel kayu silinder berdiameter 28 mm. Dengan penerapan sistem perawatan yang tepat, mesin dapat beroperasi lebih efektif, aman, dan memiliki tingkat keandalan yang lebih baik dalam mendukung proses pembelajaran maupun produksi.

Kata kunci: Mesin dowel kayu, perawatan mesin, *preventive maintenance*, *corrective maintenance*, keandalan mesin.

ABSTRACT

*Design and Construction of a Dowel Machine for Producing 28 mm Diameter
Cylindrical Dowels (Maintenance)*

(2026: xii + 46 pages, 8 figures, 6 tables, and 10 appendices)

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DIPLOMA-III MECHANICAL ENGINEERING STUDY PROGRAM

MECHANICAL ENGINEERING DEPARTEMENT

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This study discusses the maintenance of a 28 mm diameter cylindrical wooden dowel machine designed as a supporting medium for practical learning activities at the Mechanical Engineering Department of Politeknik Negeri Sriwijaya. The machine is used to convert wooden materials into cylindrical shapes with uniform dimensions through a cutting system consisting of an electric motor, pulley and V-belt transmission, shaft, and cutting blade. The objective of this study is to determine the appropriate daily and periodic maintenance procedures, machine maintenance processes, damage prevention efforts, and the implementation of preventive maintenance and corrective maintenance to improve machine efficiency and operational continuity. The research method included observation, component identification, machine condition inspection, maintenance implementation, and functional testing after maintenance activities. Maintenance procedures consisted of machine cleaning, lubrication of bearings and shafts, transmission system inspection, component adjustment, electrical system inspection, and replacement of worn components. The results showed that routine and scheduled maintenance can maintain machine performance stability, reduce unexpected failures, extend component service life, and maintain the quality of 28mm cylindrical wooden dowel products. Proper maintenance implementation enables the machine to operate more effectively, safely, and reliably to support both educational and production activities.

Keywords: Wooden dowel machine, machine maintenance, preventive maintenance, corrective maintenance, machine reliability.